

PROBLEM SUMMARY

Sample Rating Trend

VISCOSITY

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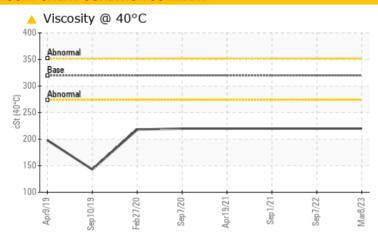
UNLOADING TO SILO'S CONVEYOR GEARBOX

Component

Gearbox

GEAR OIL ISO 320 (--- GAL)

COMPONENT CONDITION SUMMARY



RECOMMENDATION

Little or no information is provided as to the component and lubricant being tested. Recommendations are therefore generic in nature and may not apply to the current application. Please forward information as to equipment type, reservoir capacity, lubricant type and any pertinent information to allow for a more accurate assessment. Resample at the next service interval to monitor. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample. Please specify the brand, type, and viscosity of the oil on your next sample.

PROBLEMATIC 7	TEST RESULTS
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Sample Status				ABNORMAL	ABNORMAL	ABNORMAL
Visc @ 40°C	cSt	ASTM D7279(m)	320	^ 220	<u>^</u> 220	<u>^</u> 220

Customer Id: ONTATI Sample No.: WC0794199 Lab Number: 02545845 Test Package: IND 1

To manage this report scan the QR code

To discuss the diagnosis or test data: Kevin Marson +1 (289)291-4644 x4644 Kevin.Marson@wearcheck.com

To change component or sample information: Gloria Gonzalez +1 (289)291-4643 x4643 gloria.gonzalez@wearcheck.com

RECOMMENDED ACTIONS

Action	Status	Date	Done By	Description
Alert			?	Little or no information is provided as to the component and lubricant being tested. Recommendations are therefore generic in nature and may not apply to the current application. Please forward information as to equipment type, reservoir capacity, lubricant type and any pertinent information to allow for a more accurate assessment.
Information Required			?	Please specify the brand, type, and viscosity of the oil on your next sample. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.

HISTORICAL DIAGNOSIS

07 Sep 2022 Diag: Kevin Marson

VISCOSITY

Little or no information is provided as to the component and lubricant being tested. Recommendations are therefore generic in nature and may not apply to the current application. Please forward information as to equipment type, reservoir capacity, lubricant type and any pertinent information to allow for a more accurate assessment. Resample at the next service interval to monitor. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample. Please specify the brand, type, and viscosity of the oil on your next sample.All component wear rates are normal. There is no indication of any contamination in the oil. Viscosity of sample indicates oil is within ISO 220 range, advise investigate. The condition of the oil is acceptable for the time in service.



VISCOSITY

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01 Sep 2021 Diag: Kevin Marson

Little or no information is provided as to the component and lubricant being tested. Recommendations are therefore generic in nature and may not apply to the current application. Please forward information as to equipment type, reservoir capacity, lubricant type and any pertinent information to allow for a more accurate assessment. Resample at the next service interval to monitor. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample. Please specify the brand, type, and viscosity of the oil on your next sample.All component wear rates are normal. There is no indication of any contamination in the oil. Viscosity of sample indicates oil is within ISO 220 range, advise investigate. The condition of the oil is acceptable for the time in service.



VICCOCITY



19 Apr 2021 Diag: Kevin Marson

Little or no information is provided as to the component and lubricant being tested. Recommendations are therefore generic in nature and may not apply to the current application. Please forward information as to equipment type, reservoir capacity, lubricant type and any pertinent information to allow for a more accurate assessment. Resample at the next service interval to monitor. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample. Please specify the brand, type, and viscosity of the oil on your next sample.All component wear rates are normal. There is no indication of any contamination in the oil. Viscosity of sample indicates oil is within ISO 220 range, advise investigate. The condition of the oil is acceptable for the time in service.





OIL ANALYSIS REPORT

SAMPLE INFORMATION

Sample Rating Trend

VISCOSITY

UNLOADING TO SILO'S CONVEYOR GEARBOX

Gearbox

GEAR OIL ISO 320 (--- GAL)

DIAGNOSIS

Recommendation

Little or no information is provided as to the component and lubricant being tested. Recommendations are therefore generic in nature and may not apply to the current application. Please forward information as to equipment type, reservoir capacity, lubricant type and any pertinent information to allow for a more accurate assessment. Resample at the next service interval to monitor. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample. Please specify the brand, type, and viscosity of the oil on your next sample.

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

Fluid Condition

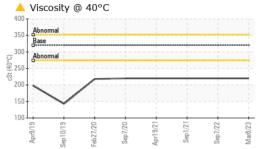
Viscosity of sample indicates oil is within ISO 220 range, advise investigate. The condition of the oil is acceptable for the time in service.

Apr2019	Sep 2019	Feb 2020	Sep2020	Apr2021	Sep2021	Sep 2022	Mar2023
		حجما	حجه		مجه		

Sample Date Client Info 08 Mar 2023 07 Sep 2022 01 Sep 2021	Sample Number		Client Info		WC0794199	WC0736567	WC0618443
Oil Age Ins Client Info N/A N/A N/A N/A Sample Status Client Info N/A N/A N/A N/A WEAR METALS method limit/base current history1 history2 Iron ppm ASTM DS185(m) >200 113 99 25 Chromium ppm ASTM DS185(m) >15 2 1 <1	Sample Date		Client Info		08 Mar 2023	07 Sep 2022	01 Sep 2021
Oil Changed Sample Status Client Info N/A N/A N/A ABNORMAL ABNORMAL ABNORMAL WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185(m) >200 113 99 25 Chromium ppm ASTM D5185(m) >15 2 1 <1	Machine Age	hrs	Client Info				
Sample Status	Oil Age	hrs	Client Info		0	0	
WEAR METALS	Oil Changed		Client Info		N/A	N/A	
Iron	Sample Status				ABNORMAL	ABNORMAL	ABNORMAL
Chromium ppm ASTM D5185(m) >15 2 1 <1	WEAR METALS		method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185(m)	>200	113	99	25
Titanium	Chromium	ppm	ASTM D5185(m)	>15	2	1	<1
Silver ppm ASTM D5185(m) 0 0 <1	Nickel	ppm	ASTM D5185(m)	>15	<1	<1	<1
Aluminum	Titanium	ppm	ASTM D5185(m)		0	0	0
Lead	Silver	ppm	ASTM D5185(m)		0	0	<1
Copper ppm ASTM D5185(m) ≥200 0 <1	Aluminum	ppm	ASTM D5185(m)	>25	<1	<1	<1
Tin ppm ASTM D5185(m) >25 0 0 0 Antimony ppm ASTM D5185(m) >5 <1	Lead	ppm	ASTM D5185(m)	>100	0	0	<1
Antimony	Copper	ppm	ASTM D5185(m)	>200	0	<1	<1
Vanadium ppm ASTM D5185(m) 0 0 0 Beryllium ppm ASTM D5185(m) 0 0 0 Cadmium ppm ASTM D5185(m) 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185(m) 50 21 23 23 Barium ppm ASTM D5185(m) 15 0 0 0 Molybdenum ppm ASTM D5185(m) 15 0 0 0 Magnese ppm ASTM D5185(m) 50 0 0 <1	Tin	ppm	ASTM D5185(m)	>25	0	0	0
Beryllium	Antimony	ppm	ASTM D5185(m)	>5	<1	<1	<1
Cadmium ppm ASTM D5185(m) 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185(m) 50 21 23 23 Barium ppm ASTM D5185(m) 15 0 0 0 Molybdenum ppm ASTM D5185(m) 15 0 0 0 Manganese ppm ASTM D5185(m) 50 0 0 <1	Vanadium	ppm	ASTM D5185(m)		0	0	0
ADDITIVES	Beryllium	ppm	ASTM D5185(m)		0	0	0
Boron ppm ASTM D5185(m) 50 21 23 23 Barium ppm ASTM D5185(m) 15 0 0 0 Molybdenum ppm ASTM D5185(m) 15 0 0 0 Manganese ppm ASTM D5185(m) 50 0 0 0 <1	Cadmium	ppm	ASTM D5185(m)		0	0	0
Barium ppm ASTM D5185(m) 15 0 0 0 Molybdenum ppm ASTM D5185(m) 15 0 0 0 Manganese ppm ASTM D5185(m) 50 0 0 <1 Magnesium ppm ASTM D5185(m) 50 26 29 28 Phosphorus ppm ASTM D5185(m) 350 272 276 269 Zinc ppm ASTM D5185(m) 100 4 1 2 Sulfur ppm ASTM D5185(m) 12500 7846 7824 8091 Lithium ppm ASTM D5185(m) 12500 7846 7824 8091 Lithium ppm ASTM D5185(m) 12 1 1 1 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185(m) >50 1 2 <1 Sodium ppm ASTM D5185(m)	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185(m) 15 0 0 0 Manganese ppm ASTM D5185(m) <1 <1 <1 Magnesium ppm ASTM D5185(m) 50 0 0 <1 Calcium ppm ASTM D5185(m) 50 26 29 28 Phosphorus ppm ASTM D5185(m) 350 272 276 269 Zinc ppm ASTM D5185(m) 100 4 1 2 Sulfur ppm ASTM D5185(m) 12500 7846 7824 8091 Lithium ppm ASTM D5185(m) <1 <1 <1 <1 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185(m) >50 1 2 <1 Sodium ppm ASTM D5185(m) >20 0 0 <1 VISUAL method limit/base current<	Boron	ppm	ASTM D5185(m)	50	21	23	23
Manganese ppm ASTM D5185(m) <1	Barium	ppm	ASTM D5185(m)	15	0	0	0
Magnesium ppm ASTM D5185(m) 50 0 0 <1	Molybdenum	ppm	ASTM D5185(m)	15	0	0	0
Calcium ppm ASTM D5185(m) 50 26 29 28 Phosphorus ppm ASTM D5185(m) 350 272 276 269 Zinc ppm ASTM D5185(m) 100 4 1 2 Sulfur ppm ASTM D5185(m) 12500 7846 7824 8091 Lithium ppm ASTM D5185(m) 12500 7846 7824 8091 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185(m) >50 1 2 <1 Sodium ppm ASTM D5185(m) >50 1 2 <1 Sodium ppm ASTM D5185(m) >20 0 0 <1 VISUAL method limit/base current history1 history2 White Metal scalar Visual* NONE NONE NONE NONE Yellow Metal scalar Visual*	Manganese	ppm	ASTM D5185(m)		<1	<1	<1
Phosphorus ppm ASTM D5185(m) 350 272 276 269 Zinc ppm ASTM D5185(m) 100 4 1 2 Sulfur ppm ASTM D5185(m) 12500 7846 7824 8091 Lithium ppm ASTM D5185(m) 12500 7846 7824 8091 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185(m) >50 1 2 <1 Sodium ppm ASTM D5185(m) >50 1 2 <1 Sodium ppm ASTM D5185(m) >20 0 0 <1 VISUAL method limit/base current history1 history2 White Metal scalar Visual* NONE NONE NONE NONE Yellow Metal scalar Visual* NONE NONE NONE NONE Precipitate scalar Vis	Magnesium	ppm	ASTM D5185(m)	50	0	0	<1
Zinc ppm ASTM D5185(m) 100 4 1 2 Sulfur ppm ASTM D5185(m) 12500 7846 7824 8091 Lithium ppm ASTM D5185(m) <1	Calcium	ppm	ASTM D5185(m)	50	26	29	28
Sulfur ppm ASTM D5185(m) 12500 7846 7824 8091 Lithium ppm ASTM D5185(m) <1	Phosphorus	ppm	ASTM D5185(m)	350	272	276	269
Lithium ppm ASTM D5185(m) <1	Zinc	ppm	ASTM D5185(m)	100	4	1	2
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185(m) >50 1 2 <1 Sodium ppm ASTM D5185(m) <1 <1 0 Potassium ppm ASTM D5185(m) >20 0 0 <1 VISUAL method limit/base current history1 history2 White Metal scalar Visual* NONE NONE NONE VLITE Yellow Metal scalar Visual* NONE NONE NONE NONE Precipitate scalar Visual* NONE NONE NONE NONE Silt scalar Visual* NONE NONE NONE VLITE	Sulfur	ppm	ASTM D5185(m)	12500	7846	7824	8091
Silicon ppm ASTM D5185(m) >50 1 2 <1	Lithium	ppm	ASTM D5185(m)		<1	<1	<1
Sodium ppm ASTM D5185(m) <1	CONTAMINANTS		method	limit/base	current	history1	history2
Potassium ppm ASTM D5185(m) >20 0 0 <1	Silicon	ppm	ASTM D5185(m)	>50	1	2	<1
VISUAL method limit/base current history1 history2 White Metal scalar Visual* NONE NONE NONE VLITE Yellow Metal scalar Visual* NONE NONE NONE NONE Precipitate scalar Visual* NONE NONE NONE NONE Silt scalar Visual* NONE NONE NONE VLITE	Sodium	ppm	ASTM D5185(m)		<1	<1	0
White Metal scalar Visual* NONE NONE NONE VLITE Yellow Metal scalar Visual* NONE NONE NONE NONE Precipitate scalar Visual* NONE NONE NONE NONE Silt scalar Visual* NONE NONE NONE VLITE	Potassium	ppm	ASTM D5185(m)	>20	0	0	<1
Yellow Metal scalar Visual* NONE NONE NONE NONE Precipitate scalar Visual* NONE NONE NONE NONE Silt scalar Visual* NONE NONE NONE VLITE	VISUAL		method	limit/base	current	history1	history2
Precipitate scalar Visual* NONE NONE NONE NONE NONE Silt scalar Visual* NONE NONE NONE VLITE	White Metal	scalar	Visual*	NONE	NONE	NONE	VLITE
Silt scalar Visual* NONE NONE NONE VLITE	Yellow Metal	scalar	Visual*	NONE	NONE	NONE	NONE
	Precipitate	scalar	Visual*	NONE	NONE	NONE	NONE
Debris scalar Visual* NONE NONE NONE NONE	Silt	scalar	Visual*	NONE	NONE	NONE	VLITE
Sound violal Noise Noise Noise	Debris	scalar	Visual*	NONE	NONE	NONE	NONE
Sand/Dirt scalar Visual* NONE NONE NONE NONE	Sand/Dirt	scalar	Visual*	NONE	NONE	NONE	NONE
Appearance scalar Visual* NORML NORML NORML NORML	Appearance	scalar	Visual*	NORML	NORML	NORML	NORML
Odor scalar Visual* NORML NORML NORML NORML	Odor	scalar	Visual*	NORML	NORML	NORML	NORML
Emulsified Water scalar Visual* >0.2 NEG NEG NEG	Emulsified Water	scalar	Visual*	>0.2	NEG	NEG	NEG
Free Water scalar Visual* NEG NEG NEG Submitted By: 2	Free Water	scalar	Visual*		NEG	NEG	

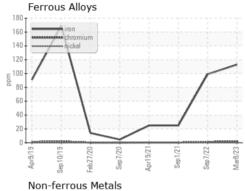


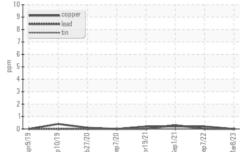
OIL ANALYSIS REPORT

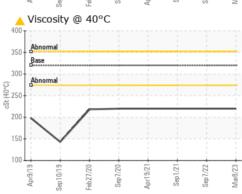




GRAPHS









CALA ISO 17025:2017 Accredited Laboratory

Laboratory Sample No. Lab Number

: WC0794199 : 02545845 Unique Number : 5550855

: WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 Received : 16 Mar 2023 Diagnosed : 17 Mar 2023 Diagnostician : Kevin Marson

Test Package : IND 1

To discuss this sample report, contact Customer Service at 1-800-268-2131. Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab. Validity of results and interpretation are based on the sample and information as supplied.

Ontario Power Generation ATIKOKAN T.G.S., BOX 1900 ATIKOKAN, ON

CA POT 1C0 Contact: Dale Anthony

dale.anthony@opg.com

F: (807)597-1198

Submitted By: ?